Catalogue of American Amphibians and Reptiles.

Powell, R. and R.A. Birt. 2001. *Anolis barkeri*.

Anolis barkeri Schmidt

Barker's Anole, Abaniquillo Arroyero

Anolis barkeri Schmidt 1939:7. Type locality, "Cascajal, Upper Uzpanapa River, Vera Cruz, Mexico." Holotype, British Museum (Natural History) (BMNH) 36.6.6.12 (subsequently recatalogued as 1946.9.4.28; Robinson 1962), an adult male, collected by R. Wright Barker in 1933 (Meyer 1968a) (not examined by authors).

Norops barkeri: Savage and Guyer 1989:111. See **Remarks**.

• **CONTENT.** No subspecies are recognized, although Robinson (1962) suggested that populations from the Los Tuxtlas region may be infraspecifically distinct from that at the type locality.

• **DEFINITION.** *Anolis barkeri* is a moderately large anole (maximum known male SVL 101 mm, Meyer 1968a; maximum known female SVL 80 mm, Robinson 1962) characterized by rugose head scales; 6–8 (occasionally 5 or 9) scales bordering the rostral; 2 (occasionally 1 or 3) scales between the nasal and the rostral; 7–9 scales across the snout between the second canthals; 0–3 scales between supraorbital semicircles; 6–11 scales comprising the supraorbital disk (these may or may not be separated from the supraorbital semicircles by small scales); 1–3 large, overlapping supraciliaries anteriorly; 9–11 supralabials to the center of the eye; and 5–9 loreal rows. The canthus rostralis is well-defined. The interparietal scale is smaller than the ear opening and is separated from the supraorbital semicircles by 2–5 scales. Suboculars usually are separated from the supralabials by a single row of scales, occasionally in contact. The mental is wider than long and in contact posteriorly with 4–6 scales between the infralabials. Dorsal scales are weakly to moderately keeled and generally with two slightly enlarged paravertebral rows grading into smaller lateral scales. Ventral scales are slightly larger than dorsals, weakly to moderately keeled, and imbricate. Scales on the dorsal surface of limbs are keeled and equal in size to dorsal body scales. Subdigital lamellae on toe IV number 13–17 under the second and third phalanges. The tail is strongly compressed laterally and bears a double row of keeled scales dorsally; these scales form a weakly developed midcaudal crest. Postanal scales are not enlarged.

Dorsal and lateral coloration ranges from a uniform dark brown to having light specks or light lateral stripes bordered in dark red. The dorsal surfaces of limbs are indistinctly banded. The chin and ventral surfaces of limbs generally are lighter than the chest and abdomen, which range in color from brick red to light brown or cream.



FIGURE. *Anolis barkeri* from the Estación de Biología Tropical "Los Tuxtlas," Veracruz, México: adult male (top), adult female (bottom left), and an adult male in a foraging position over a pool at the base of a waterfall. Note how cryptic these dark lizards are on dark rocks in shady locations.

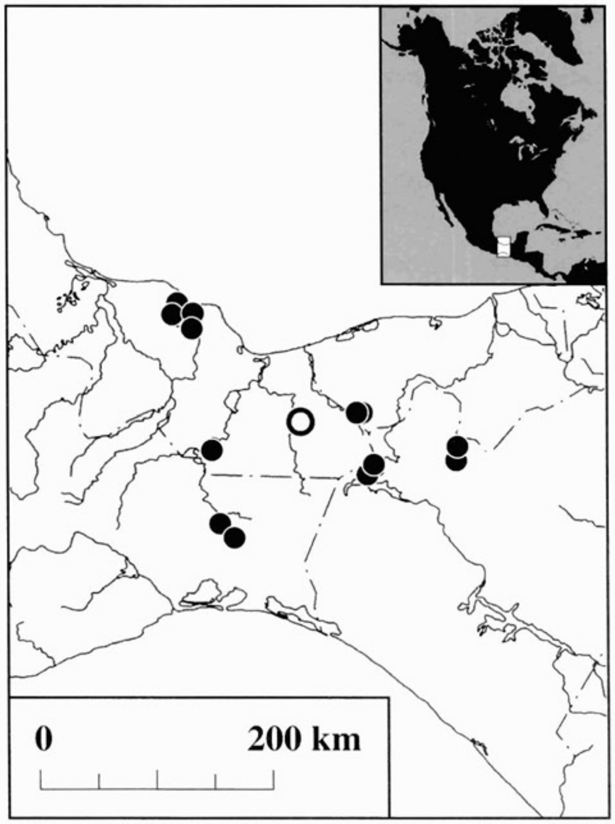
Only males have a very large dewlap with large areas of bare skin traversed by 6–8 rows of small scales. Scales are orange and the skin is red, rendering the entire dewlap deep orange centrally and slightly lighter laterally.

• DIAGNOSIS. *Anolis barkeri* may be distinguished from other Mexican and Central American anoles in having a double row of keeled midcaudal scales on the upper surface of a strongly compressed tail (Meyer 1968a).

• DESCRIPTIONS. In addition to the original by Schmidt (1939) and the redescription by Meyer (1968a), very brief descriptions were provided by Alvarez del Toro (1982) and Villarreal Benítez (1997).

• ILLUSTRATIONS. Schmidt (1939) included line drawings of the head and underside of the foot. Kennedy (1965) published the first photographs of live *Anolis barkeri* and of eggs. Meyer (1968a) included black and white photographs of pattern variations and habitat, and Meyer (1968b) used a line drawing to compare caudal vertebrae with those of *A. sminthus*. Alvarez del Toro (1982) provided black and white photographs of a male and female.

• DISTRIBUTION. Endemic to southern México, this species is known from the states of Veracruz, Oaxaca, Chiapas, and Tabasco. The range is fragmented, undoubtedly due to the ecological association of this species with clear streams in undisturbed tropical wet and moist forests (Holdridge 1967) at elevations up to about 500 m. Meyer (1968a) related this disjunct distribution pattern "to climatic change in the Pleistocene when a dispersal corridor opened between the Los Tuxtlas region in Veracruz and the areas to the south. The corridor is presently ecologically unsuitable to *A. barkeri*." Campbell (1984) indicated that fragmentation of the range was a "comparatively recent event." The range was illustrated by Meyer (1968a).



MAP. Distribution of *Anolis barkeri* (modified from Meyer 1968a). The circle marks the type locality, dots indicate other records. Because the range is fragmented (see **Distribution**), no outlines are provided.

• FOSSIL RECORD. None.

• PERTINENT LITERATURE. A discussion of morphological traits and behavior of specimens taken from the Los Tuxtlas region was in Robinson (1962). Williams (1963) compared digital morphology with that of *A. mirus* and *A. fraseri*, and discussed the validity of this character in distinguishing *Norops* (see **Remarks**). Kennedy (1965) discussed distribution and some aspects of natural history. Variation, habitat, and diet of a small Chiapan sample were described by Brandon et al. (1966). Meyer (1968a) redescribed the species, placed it in the *fuscoauratus* species series of Etheridge (1960), noted distribution, and addressed additional natural history traits. A very detailed analysis of feeding behavior and food was presented by Meyer (1968b). Fitch (1970) and Smith et al. (1972 [1973]) mentioned this species in surveys of reproductive cycles. Laerm (1973) noted aquatic tendencies. Schwartz (1978) included *A. barkeri* in a comparison of aquatic anoles, and Fitch (1981) in a list of sexual size differences in reptiles. Alvarez del Toro (1982) briefly discussed habitat. Peterson (1983) described the subdigital pad, which she characterized as "narrow, *Norops* condition, beta." *Anolis barkeri* was included in a list of Mexican species and subspecies in need of conservation as a "rare" species (Anonymous 1994). Fläschendräger and Wijffels (1996) mentioned this species' aquatic tendencies. Villarreal Benítez (1997) provided a summary of natural history, and Ramírez-Bautista and Nieto-Montes de Oca (1997) a table correlating species from the Los Tuxtlas region, including *A. barkeri*, with habitat. Birt et al. (1997) noted parasitism by immature anisakine ascarid nematodes of the genus *Terranove*, and suggested that the lizard served as an intermediate or paratenic host. Poe (1998) included *A. barkeri* in a survey of rare character states used to define a "dwarf twig" clade of *Anolis*. Reynoso Rosales et al. (1998) provided locality records extending the known range of the species into Tabasco. Poe (1999) included this species in a list assigning species to series (he assigned *A. barkeri* to "none"). Birt et al. (2001) discussed population structure, reproduction, diet, habitat, activity, and some aspects of behavior in a population from the Los Tuxtlas region.

Alvarez del Toro (1982) used the vernacular name "Anolis Arroyero." Liner (1994) suggested that "Barker's Anole" and "Abaniquillo Arroyero" be used as the English and Spanish common names for *Norops barkeri*; Frank and Ramus (1995) listed the same English common name, but listed the species under the genus *Anolis*.

The species is included in notes, checklists, guides, and keys by Smith and Taylor (1950a, b), Baker et al. (1971), Fitch and Henderson (1973), Pérez-Higareda (1978), Ramírez-Bautista et al. (1981), Flores-Villela et al. (1987), Pérez-Higadera [*sic*] et al. (1987), Pelcastre Villafuerte and Flores-Villela (1992), Flores-Villela (1993), O'Hara and Williams (1994, see also Williams et al. 1995), Lieb (1995), and Vogt et al. (1997).

• REMARKS. Guyer and Savage (1986) resurrected the anoline genus *Norops*, into which they (Savage and Guyer 1989) placed *Anolis barkeri* along with most Mexican and Central American anoles. Although the recognition of *Norops* is strongly advocated by some workers (e.g., Vitt and Zani 1996), we prefer a more conservative approach until concerns regarding generic relationships among anoles (e.g., Williams 1989) have been addressed. Savage and Guyer (1989) listed this species as a *Norops* "of uncertain status."

• **ETYMOLOGY.** The name *barkeri* is a patronym honoring R. Wright Barker, collector of the holotype.

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